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ACTION

DIST.	LTR	ENC
BOGNAR, E.	X	X
DECK, C. A.	X	X
DEGENHART, K.		
DIETER, T. J.		
DIETERLE, S. E.		
FERRERA, D.W.		
FERRI, M.S.		
GERMAIN, A. L.		
GIACOMINI, J..		
ISOM, J. H.		
LINDSAY, D. C.		
LONG, J. W.		
MARTINEZ, L.A.	X	X
MCLAUGHLIN, J.	X	X
NORTH, K.	X	X
PARKER, A.M.		
POWERS, K.		
RHOADES, D. W.		
RODGERS, A. D.		
SHELTON, D.C.	X	X
SPEARS, M.S.		
TRICE, K.D.		
TUOR, N.R.		
VOORHEIS, G.M.		
WILLIAMS, J. L.		
BUTLER, L.	X	X

COR. CONTROL	X	X
ADMN. RECORD	X	X
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Reviewed for Addressee
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STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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and Environm

August 9, 2002

Mr. Joseph A Legare
Assistant Manager for Environment and Infrastructure
U.S. Department of Energy, Rocky Flats Field Office
10808 Highway 93, Unit A
Golden, CO 80403-8200

RE: **Comments on Draft Closeout Report for IHSS Groups 100-4 and 100-5**

Dear Mr. Legare:

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division comments on this document are attached. It is important that this document clearly communicate the conditions that will need to be protected at closure. This document must compare the project sites to PRGs and then to Tier II levels for the Wildlife refuge worker risk scenario before it can be approved. We have many comments to improve the reader's understanding of the document. The Sum of Ratios needs to be recalculated to include soils put back into excavations and the toxic equivalent concentration (TEQ) also needs to be recalculated.

If you have any questions regarding this correspondence please contact me at (303) 692-3367, Elizabeth Pottorff at 303-692-3429 or Dave Kruchek at 303-692-3328.

Sincerely,

Steven H. Gunderson
RFCA Project Coordinator

cc: Norma Castaneda, DOE
Tim Rehder, EPA
Lane Butler, KH
Dave Shelton, KH
Administrative Records Building T130G

ADMIN RECORD

IA-A-001068

CDPHE Comments on Draft Closeout Report for IHSS Groups 100-4 and 100-5

1. In the introduction, and Title, it should be identified that groups 100-4 & 100-5 are specifically related to Building 123 (slab removal) and the 121 incinerator pad. This helps identify the locations of these groups and the purpose of this activity, rather than the rather nebulous groups indicated. This will also help in cross referencing and finding information related to specific areas and buildings in the future.

2. The sampling locations with exceedences of Tier 2 should be highlighted on figures 3 and 4 for quick identification.

3. Figure 6 needs to identify on the map the specific locations and levels utilized to generate this map. If only two locations were actually elevated above levels of concern why does Figure 6 identify such a large area above Tier 2?

4. Section 2.1.1 - In reviewing the RCRA Closure Report for B123, not all of the process waste lines were "clean-closed" , which should be mentioned (the process waste lines on the eastern side of B123 were not clean-closed). In addition the RCRA closure report did not specifically mention the removal of the sump in room 125. So although the sump must have been removed during removal of the building, it can only be assumed that the removal of the sump in room 125 occurred during this previous activity, since it was not found during this ER activity. This discussion should be properly modified, and this and section 2.3 should agree.

5. Section 2.2, page 15- The project goals as presented are incomplete. The notification includes additional Accelerated Action Remediation Goals:
   - Provide a remedy consistent with the RFETS goal of protection of human health and the environment;
   - Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls; and
   - Minimize the spread of contaminants during implementation of accelerated actions.
   - Section 2.2.1 states that accelerated action goals were achieved; however, no explanation is provided for these achievements.

6. Section 2.2.1 – This section should describe how the radioactively contaminated areas left covered with steel plates and the lead area were cut out of the slab and removed at the beginning of the removal activities. Text on page 19 identifies that an unanticipated pipe was discovered during remediation and removed. For this pipeline and others, where is the information identifying the exact location and condition (depth, type of pipe, type of seal, etc.) for use in subsequent evaluations or final site documentation?
   b) It is stated that Figure 7 shows the extent of pipeline left in place and not found. However, this is not shown on Figure 7. As such, Figure 7 needs to be

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modified to show this information, or appropriate references provided. Also, why don't the locations of process waste lines shown here agree with those shown on other figures, such as Figure 9? Not found, left in place?
c) Because there are numerous mention of rooms, a figure needs to be provided that identifies the locations of the former rooms in B123. This figure should, if at all possible, include the locations of process waste lines, sumps, drains, and any other physical concerns associated with the slab.
d) Additional unusual occurrences should be added to this section. This should include the lead liner found around the drain inside the concrete

7. Page 19, second bullet – The manhole locations referred to are not labeled on Figure 9. On Table 4 the Pipelines are not labeled until Figure 14, Figure 7 would be an appropriate figure to label with these numbers. In general, try to label these "landmarks" sooner in the document and then in figures that have too much other information they can be more of the background.

8. Section 2.2.3 – What is the reason for comparing data to method detection limit or background plus two standard deviations? In order to determine whether residual contamination is of concern, the comparison should be to PRG's or 10^{-6} residential risk. These values, even if not completed at the beginning of the project, should be provided here. If the numbers do not exist, then additional sampling and stewardship needs will need to be deferred until they are defined. These needs should be explicitly stated.
b) Figure 11 provides data for a confirmation sample that appears to be collected on the SW side of the west side of B123, yet this sample location is not shown on figure 9 or 10. Please identify this sample or correct the figures as necessary.
c) Figure 12 provides results for locations that did not analyze for radionuclides, please correct as appropriate. And/or correct Table 7.

9. Page 25, Table 6 – the headers on the Tier I & II columns are switched. This table and Figure 16 should also compare to 10-6 residential risk values even if background values are greater.

10. Section 2.3 The third paragraph gives three instances where radionuclides (Am-241, U-235, and U-238) were detected above background plus two standard deviations. This section needs to explain why these detections of radionuclides did not trigger additional analyses of RCRA hazardous waste constituents and why it is concluded that the sumps and pipelines did not leak.
b) The removal of the other pipelines, not associated with the three sumps should also be mentioned (the pipelines in the north and east side of B123). All of the process waste lines (New and Old) were included in the previous RCRA Closure activities, and are all RCRA concerns.

11. Section 2.4 - The discussion concerning the beryllium and methylene chloride should provide sufficient information to demonstrate why these analytes are not a concern. As such, if the detections of methylene chloride in the blanks indicate

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that this is a lab contaminant and not a site contaminant, this should be so stated, rather than implied for the reader to judge. Also, additional discussion concerning the beryllium detection should be provided to show why this is not a concern and was not remediated.

12. Section 2.4.1 - contains an admirable start on capturing the stewardship information. Figure 16 and Table 8 provide an excellent presentation of known information. Additional information is needed to determine the exact final location of the sampling points, including survey information and whether the sampling location was covered with topsoil and is now buried at an unspecified depth beneath the topsoil applied to the site.

13. It is unclear whether the recommended stewardship actions are really necessary. Does the residual contamination require management? Is it necessary to prohibit activities in this area because of residual contamination? If so, what area does this restriction apply to? Are the pipes left in place contaminated? What types of activity are restricted? In the long-term, is federal ownership required and why? What long-term monitoring is needed and why? The notification identified land use restrictions to prevent soil excavation. Are these necessary or not? If so, to what extent? Is it necessary to maintain a soil covering over the area, and if so, how much? Would additional soil removal eliminate these long-term requirements? If so, where is the justification, including costs, showing that leaving the material is appropriate?

14. Section 2.4.1 - Table 8 - The Tier 1 and 2 headers are incorrect, please switch.

15. Section 2.5 - VOC samples should be added to the analyte list for sample BV38-0001 when it is collected as it is closest to the well 10498 which has hits of PCE. As sampling upgradient of this well did not include VOC's the area may require further investigation if the hits in well 10498 continue.
    b) It is mentioned that two planned confirmation samples were not collected, but there is no mention of the other three samples that were not collected, nor is there any discussion of other samples that were collected or changes in proposed sample locations. Please provide an appropriate explanation of all deviations (see Figure 9).

16. Section 2.6 - The purpose of this section is unclear. As written it describes the actions taken very briefly, but does not indicate the current condition of the area. This might be a good place to define the arrangement and location of sealed pipe ends, proximity to adjacent IHSS's that may require action, etc. It should identify the current site conditions, rather than a recap of the activities to date. This should include the location, depth, and condition of all remaining infrastructure, concrete, asphalt, pipes, drains, conduits, tanks, wells, etc. Depth of remedial activities/disturbed soil. Presence (location, depth, and levels) of any unremediated contamination or possible contamination, as well as proximity to

adjacent IHSS's that may require action. Type, depth and extent of any fill material placed at this site, including topsoil

17. Section 2.7 – Stockpiled soils that are returned to the excavation become part of the residual contamination analysis if they have results exceeding 10^{-6} residential risk or background. Please provide a discussion regarding the management and disposal of the lead contaminated concrete (lead liner found inside the concrete) found in the slab on the north side of B123. There should be some mention of this and appropriate disposal as RCRA waste or LLMW. This should also be reflected in Table 9.

18. Section 2.8 – Is vegetation monitoring being conducted for re-vegetated sites? It does not appear that any of the Canada bluegrass has sprouted.

19. Figure 17 – Please provide details of pipes left in place, depth, exact location and condition, type of pipe, type of seal, etc.

20. Page 44 Table 10 – Although the soil is sampled under the waste program if it is put back in the excavation it should be included with samples in Table 8 rather than here.

21. Section 2.9 - Figure 18 needs to be modified to prevent confusion. The legend needs to include the sampling locations and not the line descriptions, which appear to be erroneous. If they are not erroneous, please explain the discrepancies between this figure and the previously presented information. The pipelines should be removed and only the excavated areas identified along with the sampling locations. However, all of the excavated areas that would effect the old samples should be shown, but only the shallow samples would be effected by the excavations, the deeper ones may not be effected. Excavations also occurred to remove the foundation, footers and other pipes.

22. Section 2.10.1 – the put-back soils need to be included in the SOR calculation.

23. Page 51, Table 12 – what is "pipe scale", please describe. Why did water samples sent to Laboratory 559 have a high reporting limit?

24. Section 3.0 – The report indicates that PCBs were burned in the security incinerator and that potential chemicals of concern (PCOCs) at the site are dioxins, furans, and PCBs. As discussed above, several PCB congeners are classified as exhibiting dioxin-like properties. Therefore, when calculating a dioxin-equivalent concentration, it is important to recognize/include the contribution from this class of chemicals. However, at this site, only dioxin and furan congeners were incorporated into the TEQ approach. It would be appropriate to include the dioxin-like ones into this approach, or provide a reason as to why they were not evaluated.

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The TEFs utilized in this approach were obtained from the 1994 SW-846 Method 8290. These should be replaced with the values established in 1998 by the World Health Organization (WHO). The WHO values have been recently used by EPA Region 8 and CDPHE to assess dioxin and dioxin-like compounds in surface soils at numerous locations in the Denver Front Range Area and at the Rocky Mountain Arsenal. The WHO values are available in the following reference:

> Van den Berg, M. et al. 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. Environmental Health Perspectives 106: 775-792.

The language used in Section 3.2 to describe the TEQ process is confusing and should be clarified. The value of 9, refers to 9 ppt (pg/g) dioxin which was calculated as a surface soil PRG for a wildlife refuge worker. The fact that this value is a PRG should be specified in the document. Referring to it simply as 9 toxicity equivalents is inappropriate, since the units and derivation of the value are missing. Additionally, the text indicates that the dioxin/furan TEQ was compared directly with the TEQ of 9 in Table 18. Whereas, congener-specific TEQs are provided, no comparison is shown and furthermore this comparison should not be on a congener specific basis, but should be on the sum of all congener specific TEQs. The text should be revised to indicate that the total TEQ (sum of all congeners) was higher/lower than the 9ppt PRG value.

According to Figure 20, the maximum concentration of each congener was not used in Tables 17 & 18. For example, the maximum concentration of OCDD is presented as 180 pg/g in the tables, however, a maximum of 290 pg/g is observed in Figure 20 at location BT39-A003. This occurs for several congeners, resulting in an underestimation of the presented TEQ concentrations.

Table 18 should be expanded to include the sum of all congener-specific TEQ values. This sum is the Total TEQ for the mixture and is the value that is comparable to the health-based value. The comparison should not be performed on a congener-by-congener basis, since it is the total dioxin equivalent concentration that is the decision basis.

Table 17 & Table 18: The units of concentration for the PCDDs and PCDFs should be provided.

Table 18: TEF values are unitless (ie., NOT pg/g)

25. Appendix B – The analytical method column lists HPGe rather than Gamma Spectroscopy, isn't there a difference between these methods? Unrelated sample results seem to be included after the second page of 100-611 data, they appear to be from the 886 and 889 sampling. Please provide replacement pages for all of the pages with over typing on them. This includes pages 9, 10, 12, 13, & 14 of the UBC 123 data.

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